

ganochlorine compounds along the shorelines of the Great Lakes, and density dependent factors in the interior, relatively uncontaminated areas. The continuing recovery of this population will depend on maintaining greater productivity in interior areas to compensate for lesser fecundity and greater adult mortality along the shorelines of the Great Lakes.

BREEDING SUCCESS OF PEREGRINE FALCONS IN RELATION TO WEATHER IN AN ARCTIC ENVIRONMENT

BRADLEY, M. *Wildlife Biologist, Department of Renewable Resources, GNWT, Fort Smith, NWT X0E 0P0 Canada*

We studied variability in breeding success and correlated breeding success with weather in an Arctic population of peregrine falcons (*Falco peregrinus*). We found that breeding phenology had a low degree of variability, and was related to weather only one year out of 12. Breeding success was high for the species (on average 1.4 chicks per territorial pair, or 2.5 chicks per successful pair), but variability was also high (0.6–2.5 chicks per territorial pair). Clutch size was correlated with rainfall and wind during the prelaying stage ($r^2 = 0.75$, $P < 0.01$) and severe weather events coincided with high mortality of young during both the incubation and nestling stages of the breeding season. We also found that severe weather early in the breeding season could delay and cause subsequent high chick mortality. Mortality of young was significantly different among the three stages of the breeding season, but this difference was only seven percent (26% mortality during the nestling stage, 33% during the incubation stage). Long term climatic changes that result in an increase in snowfall or storms could be deleterious to Arctic peregrine falcons.

AUTUMN MIGRATION OF PEREGRINE FALCONS DETERMINED BY SATELLITE RADIOTELEMETRY

BRITTEN, M.W. *National Park Service, Rocky Mountain Regional Office, Denver, CO U.S.A. and Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO 80523 U.S.A.* S. AMBROSE. *Endangered Species Office, U.S. Fish and Wildlife Service, Fairbanks, AK 99701 U.S.A.* P.L. KENNEDY. *Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO 80523 U.S.A.*

We report on the results of a study of fall migration of adult female peregrine falcons (*Falco peregrinus*) tracked by satellite radiotelemetry. In July and August 1994, we captured 15 adult female peregrine falcons on their upper Yukon River breeding area in eastcentral Alaska and attached satellite radiotransmitters to them using backpack-style harnesses. We report on the migration route, direction and speed of the birds and analyze their movements in light of broad scale weather patterns during autumn.

CUTTING THE BOREAL FOREST: IMPLICATIONS FOR CANADIAN FOREST-DWELLING RAPTORS

COURT, G. AND S. HANNON. *Department of Zoology, Biological Sciences Building, University of Alberta, Edmonton, Alberta T6G 2E9 Canada*

Recently, very large forestry leases have been granted to companies interested in cutting aspen (*Populus* spp.) in the mixed-wood boreal forest of western Canada for pulp production. In less than 2 yr, the government of Alberta leased over 220 000 km² of this forest without any environmental impact assessments or public hearings. Subsequently, several forestry/wildlife impact studies were initiated, however little consideration was given to the effect of these harvests on forest-dwelling raptorial birds. Eight species of owls, three species of accipitrine hawks, and two forest-dwelling buteos may breed within this region and the target harvest species (mature aspen) comprises the type of habitat used by several of these raptors for foraging and nesting. For some Vulnerable (C.O.S.E.W.I.C.) species, like the Cooper's hawk (*Accipiter cooperii*), the forests of Northern Alberta may represent a large portion of the unbroken nesting habitat remaining within the range of this bird in Canada. Until recently, there has been no attempt to survey for populations of raptors in the mixed-wood leases, much less attempt to determine the relative abundance of different species or how forest cutting practices might affect populations. During the summers of 1993 and 1994, we attempted to survey raptors in a portion of the largest forest management area in Alberta. Here, we provide preliminary results of these surveys and detail plans for future work on raptor populations in this area. We highlight potential impacts of aspen harvesting on migratory species so as to encourage international raptor migration/count programs to evaluate population trends in light of very large industrial forest operations in Canada.

LEAD LEVELS IN GOLDEN EAGLES IN SOUTHEASTERN IDAHO

CRAIG, E.H. AND T.H. CRAIG. *Western Ecological Studies Team, P.O. Box 82, Tendoy, ID 83468 U.S.A.* A.E. THOMAS. *Bureau of Land Management, State Office, 3380 Americana Terrace, Boise, ID 83707 U.S.A.*

We studied the occurrence of lead in free-ranging golden eagles (*Aquila chrysaetos*) in two adjacent river valleys in southeastern Idaho from December 1989 to present. Blood samples ($N = 178$) from golden eagles were analyzed for lead and grouped into one of four categories: <0.20 ppm = background; 0.20 – 0.59 ppm = exposed; 0.60 – 0.99 ppm = clinically affected; ≥ 1.00 ppm = acute lead poisoning. Forty-two percent of all wintering golden eagles sampled had elevated blood lead levels (≥ 0.20 ppm) and there was a highly significant difference in lead levels between golden eagles wintering in the two river valleys. All the eagles in